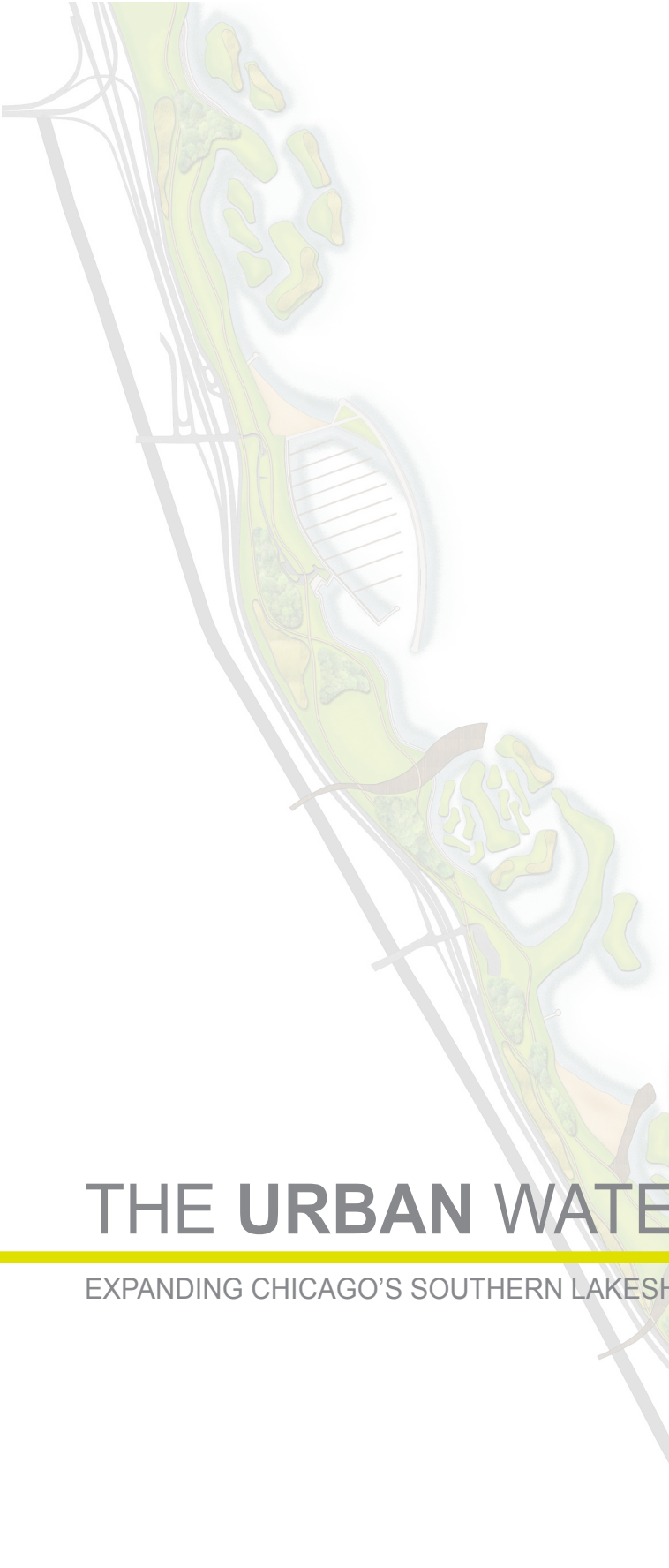

THE **URBAN** WATERFRONT

EXPANDING CHICAGO'S SOUTHERN LAKESHORE ENVIRONMENT

BY **ERIN** TROMPETER

THE **URBAN** WATERFRONT

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To *my family* - My pillars of strength. The reason I am the person that I am today. Without you, I am nothing. I will love you for all of time.

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ABSTRACT

This comprehensive project took place along the shores of Lake Michigan just south of downtown Chicago, IL. The goal was to create an urban waterfront park that would be historically significant in terms of location and theme while becoming a unique experience along the lakefront. This project provided connections to important contextual elements such as the existing park space network as well as surrounding neighborhoods and communities, in hopes of increasing pedestrian activity in this area. The waterfront park also offered a multitude of passive and active uses which encouraged as many user groups as possible to explore the site.

Figure 1.1 Chicago Skyline Panorama

INTRODUCTION

"The lakefront by right belongs to the people."

Burnham and Bennett

This quotation exemplifies the philosophy of the city of Chicago since the Burnham Plan was written in 1909, and the city has worked hard to maintain the lakeshore as a strictly pedestrian zone. There have been many plans developed for the lakefront since the 1909 plan, and many aspects of these plans have been implemented. However, there are areas that have not been developed in accordance with these plans, most notably a section of the lakeshore just south of downtown, resulting in limited lakefront access for the neighboring communities. This project looked at creating a master plan for the portion of the lakefront just south of Northerly Island in an effort to realize the vision that Daniel Burnham and others had foreseen over a century ago.

Many plans in the past have envisioned a series of islands and lagoons along this section of the lakefront in order to protect the shore from erosion and create calmer waters for pedestrian interaction with the lake. This plan considered the creation of said islands as well as shoreline expansion through landfill and land reclamation. Important considerations for this project were the necessary design principles for waterfront parks as well as the important connections to make to the existing park network and connections to surrounding communities.

THE PROBLEM

PROBLEM STATEMENT

SUB-PROBLEMS

HYPOTHESIS

DELIMITATIONS

DEFINITIONS

ASSUMPTIONS

SIGNIFICANCE

PROBLEM STATEMENT

The research examined the characteristics and design principles of urban waterfront parks. It explored the best possible locations to incorporate an urban waterfront park along the lakeshore in downtown Chicago and how it would be logically integrated into the existing park/trail network. This research also addressed the necessary structure for building a waterfront park along Lake Michigan.

Figure 3.1 Crowd at Chicago Air and Water Show

SUB-PROBLEMS

1. What are the characteristics and significant design principles of urban waterfront parks?

2. Where is the best possible location to incorporate an urban waterfront park along the lakeshore in downtown Chicago and how would it be logically integrated into the existing park/trail network?

3. What types of structures and engineering are necessary for creating a waterfront park on Lake Michigan?

Figure 3.2 Chicago Skyline from South Shoreline

HYPOTHESIS

1. The project site selection was influenced by past and present lakefront plans that have been partially or fully implemented in order to create a design that celebrates the history of the lakefront.

2. This project included plans for enhancing existing and establishing new community connections to the lakeshore and the necessary infrastructure to do so to encourage pedestrians to access and utilize the new and existing park spaces.

3. This project connected into and integrated well with the existing park space network along the lakeshore, using common existing design themes to establish this connection so that the lakeshore continues to be a cohesive landscape.

4. This project utilized up-to-date technology for coastline landfill and land reclamation to encourage sustainable construction practices on ecologically sensitive areas.

DELIMITATIONS

1. This project included a master plan for the entire site, but did not include designing the entire scope of the project at the site design level.

2. This project included only the basic engineering guidelines and principles associated with coastline landfill and land reclamation.

3. This project only included planting design at the master planning level aside from plantings included in site detail plans.

DEFINITIONS

BEST MANAGEMENT PRACTICES – the method that is found to be the most effective way to achieve a specific goal (stormwater management in this case)

BREAKWATER – a structure used as a barrier near shorelines to protect the shore from the full effect of waves and weather

DREDGING – excavating sediments and sand from the bottom of bodies of water in order to move it to another location

LAND RECLAMATION – the practice of constructing new land and often involves the process of dredging

SITE AMENITY – a feature of a site design that is meant to increase the aesthetic and the value of the site

WATERFRONT PARK – a public park space that lies adjacent to and interacts with a significant body of water

ASSUMPTIONS

1. This project falls under the proper zoning for the lakefront.
2. Adequate funding exists for this waterfront project.
3. There is a desire within the community and the city for a project of this scope.

SIGNIFICANCE

Chicago has made a serious point of preserving the lakeshore in downtown Chicago and has received much praise for doing so. The goal is to keep the waterfront property available for Chicago's residents and visitors to enjoy. This project continued that tradition and looked at incorporating a waterfront park into the existing park system to provide a way for Chicago residents and tourists to access and enjoy the southern portion of the lakefront. Investigating the possible locations and benefits of an urban waterfront design in Chicago brings to life some of the historical plans for the lakefront that never came about and helps to realize goals that were maybe put to rest long ago. This project also provided the much needed and well deserved park space to the south side neighborhoods that is currently lacking.

Figure 3.3 Aerial View of Chicago's South Shore

REVIEW OF LITERATURE

URBAN WATERFRONT CHARACTERISTICS

CHICAGO LAKEFRONT HISTORY

WATERFRONT ENGINEERING

31ST STREET HARBOR

URBAN WATERFRONT CHARACTERISTICS

The face of the urban waterfront is changing. As the industrial uses filter out, opportunity for other uses to infiltrate these areas arises. As the needs and uses of the waterfront change, the characteristics of these spaces also have a dramatic shift. Different literary works have outlined how different cities have dealt with this shift and the important criteria that need to be considered when exploring urban waterfront opportunities.

Figure 4.1 Barcelona Waterfront

Raymond Gastil outlines some of the world's most recognizable and historic waterfronts and the implications behind each, as well as the progress that New York is making toward revitalizing its urban waterfront. The city has faced extreme challenges reclaiming the waterfront throughout Battery Park City since the tragedies of September 11th, but it has taken great strides towards recovery. Bold projects are being proposed for the site and the surrounding area in order to restore one of New York's most popular tourist areas while instilling a sense of remembrance. The Fresh Kills site is also a sign that New York is rebuilding, taking an enormous landfill and creating an ecological landscape through habitat restoration. Maintaining a sense of place and incorporating historical references is something that I have striven for in my design of this new waterfront park in Chicago.

Gastil also acknowledges the change from a technological and functional condition along city waterfronts to now a more predominantly cultural one and the necessity to incorporate history and culture into the waterfront design. A city that has done so recently is Barcelona. It has used its newly redesigned waterfront to carry the city's Catalan identity out onto the waterfront and reflect the unique architectural history of the city, while maintaining the structure that reflects the industrial past. Las Ramblas, Barcelona's famous pedestrian boulevard, was extended out onto the water, creating an energized area full of street performers and shopping that also celebrates the sea. Staying true to its commitment to unique design, a wealth of architectural and landscape architectural projects have been created along the sea in Barcelona that are all distinctive and add something special to the city. What rings true in each, however, is the true appreciation for the water, resulting in spaces that focus strongly on viewsheds and orientation. Chicago shares this same philosophy of providing as many views of the lake as possible and this is something that has carried through to my design.

Waterfronts also work simultaneously at neighborhood and metropolitan scales, which means they need to function for a few people as well as for a few thousand people at one time. A city that has achieved this is Amsterdam, which has been redeveloping its post-industrial waterfront to function on both a large and small scale in the public as well as the private sector. This process has included the redevelopment of the vast amount of islands, piers, and wharves that had been dedicated to the shipping industry. Through a series of major projects that include commercial, residential, and outdoor uses, the waterfront has transformed into an entity that can be enjoyed by the individual, the local neighborhoods, and the

Figure 4.2 Amsterdam Canal View

entire city. Residential developments provide the private and community space that people desire while waterfront park developments provide the large scale spaces that serve the residents as well as the tourists. This patchwork of spaces has been woven together to create a design that accommodates as many users as possible, a feat I tried to achieve in this design. I focused primarily on integrating passive and active recreational spaces together to achieve the balance, which allowed for the application of similar principles.

Beyond being sensitive to historical significance and scale, specific criteria have been outlined that can be followed in order to ensure successful urban open space.

Francis says that these criteria include user needs, relaxation, passive and active engagement, discovery, and safety/security.

All of these criteria fit into four main categories: accessibility, activities, comfort, and sociability (Francis, 14). This waterfront park design achieves these main criteria by designating site programming and uses. This includes passive spaces such as natural prairies and walking trails for relaxation, and active spaces such as open lawns and bike trails for recreation.

Providing safe and logical connections was also an important factor and key to the success of the park. Sociability is addressed by providing spaces for functions and gatherings. Designating areas for performances and festivals helps not only give the space purpose but promotes interaction and community as well.
Francis also provides a case study of Bryant Park in New York City, which describes the key design features from before and after the park redesign of the

Figure 4.3 Bryant Park

Figure 4.4 Summer in Bryant Park

90's. Before the park was redesigned, Bryant Park was a haven for drug dealers and rarely saw any positive pedestrian activity. The new park design opened up the space and honed in on the needs of the context and surrounding users, inviting and engaging more positive uses of the space that is still, to this day, very successful. The new design is visually accessible, which provides a comfort level and allows the surrounding built environment to take ownership of the space. There is also an incredible amount of seating that is movable and creates so many user opportunities for all kinds of interaction. "If spaces ignore human needs, then they are not well designed (Francis, 41)." Understanding the possible user groups and all of their potential needs was necessary and required knowledge of the users of the parks in the surrounding area.

Understanding the reasons why other successful waterfronts were designed was important when it came to deciding how Chicago's waterfront could be improved. Chicago has a rich history that has always included its connection to the Lake, and incorporating that history was a necessary component of this design. Like Barcelona, Chicago has a very unique and recognizable built environment. The architecture is very distinctive as well as the open space environment. The possible ways to carry the architectural themes into site features was considered when creating this waterfront park.

Creating a waterfront park that works at an individual, community, and city-wide scale was important to making this a successful project and required creating spaces that serve multiple functions. Creating intimate spaces where small groups can gather was just as important as including venues for thousands to gather.

Francis's criteria for creating urban open space acted as a checklist for this waterfront park. The success of this design relies heavily on how well connected it is to the rest of the city and how accessible it is for pedestrians, so achieving this criteria was a key focus of my design process. There are many successful neighborhoods that line the lakeshore, and without allowing the residents access to the park, there would be a severely depleted user population. The sociability aspect was also very important; this waterfront park has many amenities and opportunities in order to attract many users and create a vibrant environment.

Figure 4.5 Harbor View, Barcelona

CHICAGO LAKEFRONT HISTORY

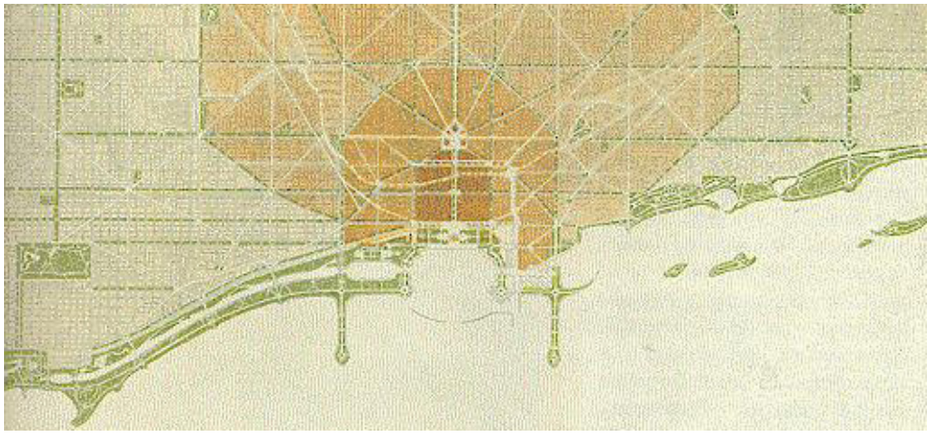


Figure 4.6 Burnham Plan

The city of Chicago has always had a strong relationship with the lakefront. It is one of the aspects of the city that makes it so distinctively Chicago. When it came to deciding on possible site locations for a new waterfront park, influential factors included the history of the Chicago lakefront, the long-term plans that have been in place for lakefront development, and any current measures that are being taken to further develop the waterfront.

Cairns describes Illinois' distinctive Midwestern landscape that was created by some of the most renowned American landscape architects, including the Olmsteds, Jens Jensen, and H.W.S. Cleveland. The Illinois landscape, including Chicago's interconnected park and boulevard system, established a unique prototype for landscapes across the country. Also uniquely Chicago is the completely public lakefront that has been expanded over the years, most notably by the Chicago Fire debris that was deposited into the lake.

Many master plans have been created over the years that have outlined different ways to develop the lakefront property. The 1909 Burnham Plan created by Daniel Burnham is quite possibly the most famous iteration of lakefront plans, which called for wide boulevards and extensive lakefront development in a traditional Baroque style, much of which was executed. The main organizing factors for this plan were the integration of systems, both transportation and recreation, to lay out the streets, buildings, and park space simultaneously. This plan called for a completely public lakefront, a greenbelt around the city's downtown, and put emphasis on Chicago's numerous transportation opportunities, including the road, the rail, and the river.

The Olmsted brothers also developed a master plan for the downtown that included developing Lake Shore Drive, creating a series of harbors, and manifesting a chain of islands to protect said harbors. The first island, Northerly Island, was constructed, but the rest of the chain never came to fruition.

Figure 4.7 World Exposition, Chicago

These early plans for Chicago were influential in my design process of this waterfront park because it demonstrated the opportunity to continue the design theme that was established along the lakeshore. The Burnham Plan has had the greatest impact on the design and development of the city of Chicago. the vision that the Olmsted brothers had for a series of islands in the lake also warrants further investigation into the possibility of completing that plan.

An extensive lakefront plan was also created in 1972 by the City of Chicago and Mayor Richard J. Daley, which sets forth a new vision for the lakefront that harkens back on the early plans but does so in an environmentally conscious manner. This plan establishes planning guidelines that include expanding the parks and beaches through landfill, designing the lakeshore to fight the severe erosion that it is facing, create strong community linkages to the lakeshore, establish activity clusters to help populate the lakefront, improve circulation for pedestrians and bicycles

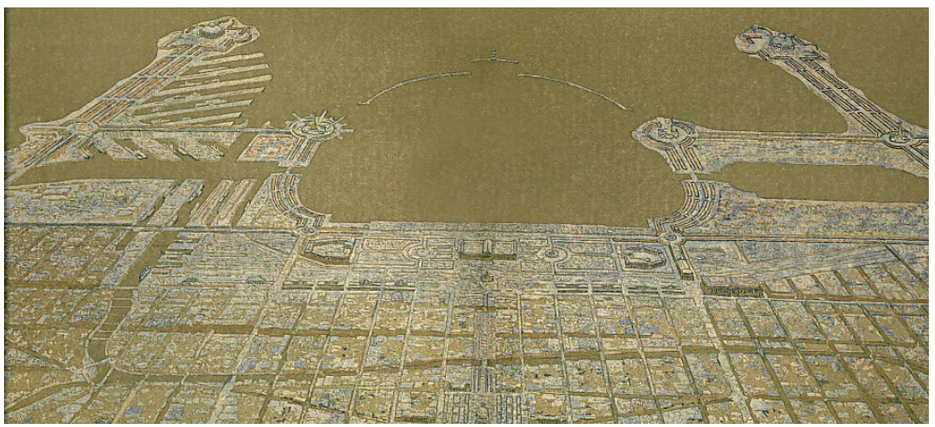


Figure 4.8 Burnham Plan, Aerial View

along the lakefront, and improve the water quality and ecological balance of Lake Michigan. The overarching theme for these guidelines was to ensure that any new designs integrate with existing spaces and networks.

Upon studying earlier plans as well as this 1972 plan and then comparing to the existing site features, one section of the lakeshore was never developed to the desired capacity, and that is the southern section beginning with Northerly Island and southward toward Jackson Park. This created an incredible opportunity for my comprehensive project because by designing these islands that have always been envisioned but never executed, I had the chance to create something that would integrate seamlessly into the existing park network but would also be a series of completely unique spaces that would bring something new to the Chicago lakefront system. This also provided the opportunity to connect into the well-established neighborhoods just west of this area that have never had safe access to the lakefront nor have they had adequate park space to access in the first place.

WATERFRONT ENGINEERING

The concept of creating land for this waterfront park required an understanding of the feasibility of a project like this. The important thing to remember is that a significant portion of Chicago's lakefront is already man-made land, and nearly every plan that has been created for the City of Chicago lakefront has included expanding the lakefront through landfill of some kind. Having a basic understanding of how land can be in filled and created also provided a better understanding of the opportunities and constraints of a project like this.

Figure 4.9 Park Space Created by Landfill in Chicago

Figure 4.10 Palm Islands Construction

Figure 4.11 Palm Islands Aerial View

Land reclamation can mean two things – returning undesirable land to a desirable condition, or constructing new land along coastlines and in bodies of water. The first option can be accomplished, for example, by covering a garbage dump or landfill with soil to create usable park space or a golf course. The second option, constructing land, is usually done through the process of dredging material like sand and rock from bodies of water and depositing it in the desired location (Hadley, 18). This is the process that would be used for my site. It is a trusted practice used in the city of Chicago along the lakeshore and is the most feasible method for constructing islands that require stability.

Cities have been expanding their coastlines for centuries, doing so using a multitude of techniques. One of the most recent projects (that is in fact still ongoing) is the City of Dubai and the creation of the Palm Islands. Dubai has been building three artificial islands off its coast for over a decade using the most up-to-date technologies to do so. The islands, which have taken the form of date palms, have added over 520 kilometers of coastline to the country. Jazairy explains that the shaping of the land was all made possible through satellite imagery combined with a GPS system that helped the workers to create the desired landform. Materials used were dredged from the Persian Gulf; ships sprayed the sand while cranes laid breakwater rocks along the edge of the islands. Each island provides opportunity for different development, depending on its relationship to the context.

These concepts were important to understand for my comprehensive project design. Although my comprehensive project scope was miniscule compared to the Palm Islands project, seeing innovative and modern ways to create landform helped to improve my understanding of the landform process. Since landfill and land reclamation is something that has been used (and at the very least planned) for the lakefront, it is a very feasible option for this waterfront park.

31ST STREET HARBOR

Currently under construction and opening in May 2012, the Chicago Park District is adding a new harbor to its very successful existing harbor network. Located at 31st Street just south of Northerly Island, this harbor will provide approximately 800 boat slips to an area that has been lacking in harbor facilities for years. This significant addition to the lakefront will be a major attraction for this portion of the lakefront and help to draw thousands of visitors to this area annually.

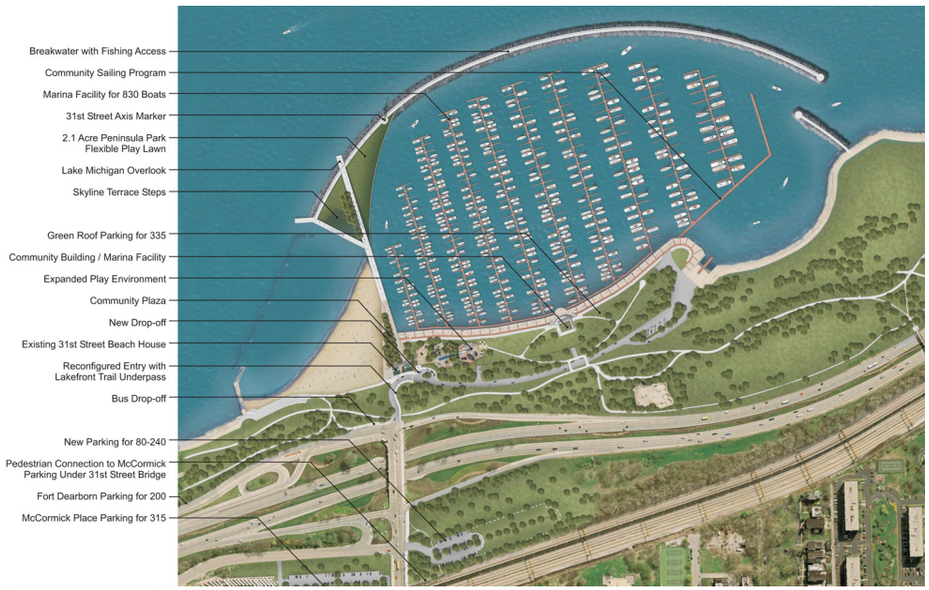


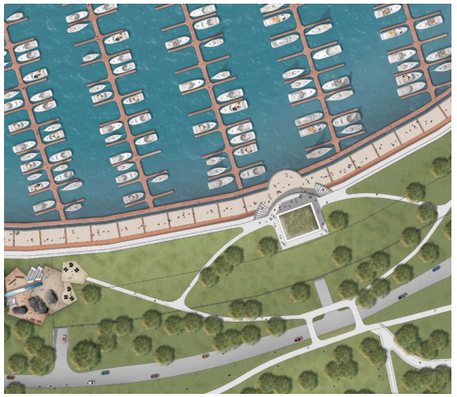
Figure 4.12 31st Street Harbor Concept Plan

Figure 4.13 31st Street Harbor Concept Rendering

Figure 4.14 31st Street Harbor Concept Aerial

Other features to be added to the harbor include increased park space and an improved playground and skate park. A new community building and marina facility will also be built. Underground parking will increase on-site parking and help to accomodate all potential harbor users. Water recreation is also an important component of this site, and areas for canoe/kayak storage will be provided in addition to fishing facilities.

The future 31st Street Harbor will help breathe new life into this section of the lakeshore and hopefully act as a catalyst for further development.



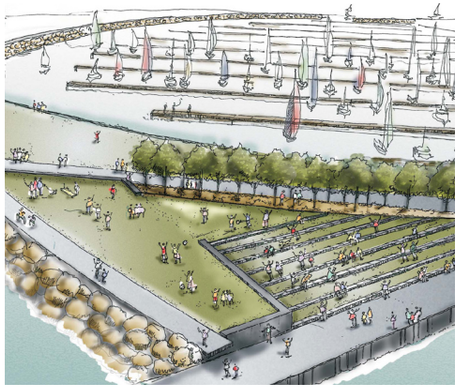


Figure 4.15 31st Street Harbor Concept Images

PROJECT REQUIREMENTS

CLIENT AND USERS

PROJECT GOALS AND OBJECTIVES

SITE PROGRAM

CLIENT AND USERS

THE CLIENT

The City of Chicago
The Chicago Park District

THE USERS

Chicago residents
Members of the neighboring communities
Residents of the Chicagoland area
Water recreation enthusiasts
Tourists

Figure 5.1 Grant Park, Chicago

GOALS AND OBJECTIVES

GOAL 1: Create a waterfront park that is well connected to the existing open space network and the lakefront both physically and thematically.

Objective 1: Find locations to extend trails and pedestrian routes from nearby parks into site.

Objective 2: Integrate design elements and site features from existing park network into site to establish visual continuity and connectivity.

Objective 3: Use design elements that demonstrate the historical significance of the lake and the site.

GOAL 2: Connect as many user groups as possible to the site.

Objective 1: Provide safe and direct pedestrian access from adjacent communities and neighborhoods into the site.

Objective 2: Add bike lanes and sidewalks where necessary on existing streets surrounding the site to encourage more pedestrian activity.

Objective 3: Use signage and wayfinding to assist users in accessing the site.

GOAL 3: Create a park that is unique to the waterfront and celebrates water.

Objective 1: Create a waterfront park through a series of islands built near the lakeshore that will bring new identity and excitement to the lakefront.

Objective 2: Allow users to interact directly with the lake in an effort to urge users to better appreciate the lake as an amenity.

SITE PROGRAM

ACTIVE ZONES AND USES

31st. Street Harbor
Beaches
Event Lawns
Piers
Kayaking
Canoeing
Sailing
Biking / Walking Trails
Transient Boating Slips

PASSIVE ZONES AND USES

Bird Sanctuaries
Bird Hide
Prairie / Grassland Restoration
Fishing
Lagoons
Wetlands
History / Heritage Trail
Outdoor Museum Space / Galleries

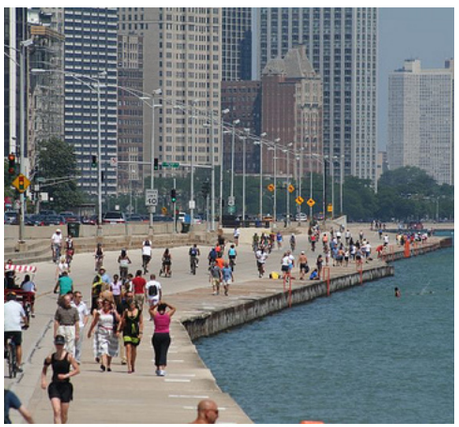


Figure 5.2 Chicago Lakefront Path


Figure 5.3 Outdoor Concert Space


Figure 5.4 Canoeing Group


Figure 5.5 Sailing Lesson


Figure 5.6 Beach


Figure 5.7 Fishing Pier

THE SETTING

LOCATION / VICINITY MAP

PROJECT SITE

SITE INVENTORY

SITE ANALYSIS

CASE STUDIES / DESIGN PRECEDENTS

LOCATION / VICINITY MAP

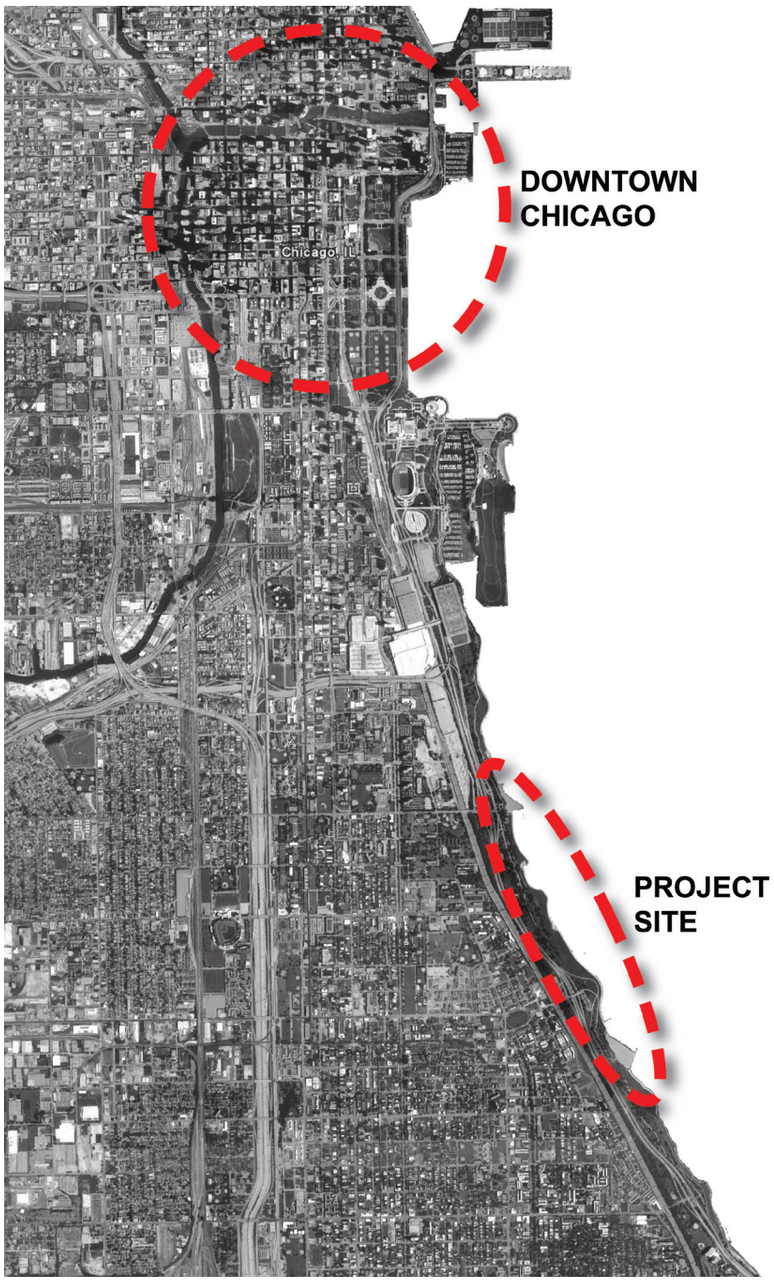


Figure 6.1 Vicinity Map

The project site is roughly one mile south of downtown Chicago along the shores of Lake Michigan. The project area is very close to Chicago's Museum Campus, which is home to the Shedd Aquarium, the Adler Planetarium, and the Field Museum. Also just north of the site are Soldier Field and McCormick Place. It is adjacent to several neighborhoods on Chicago's south side.

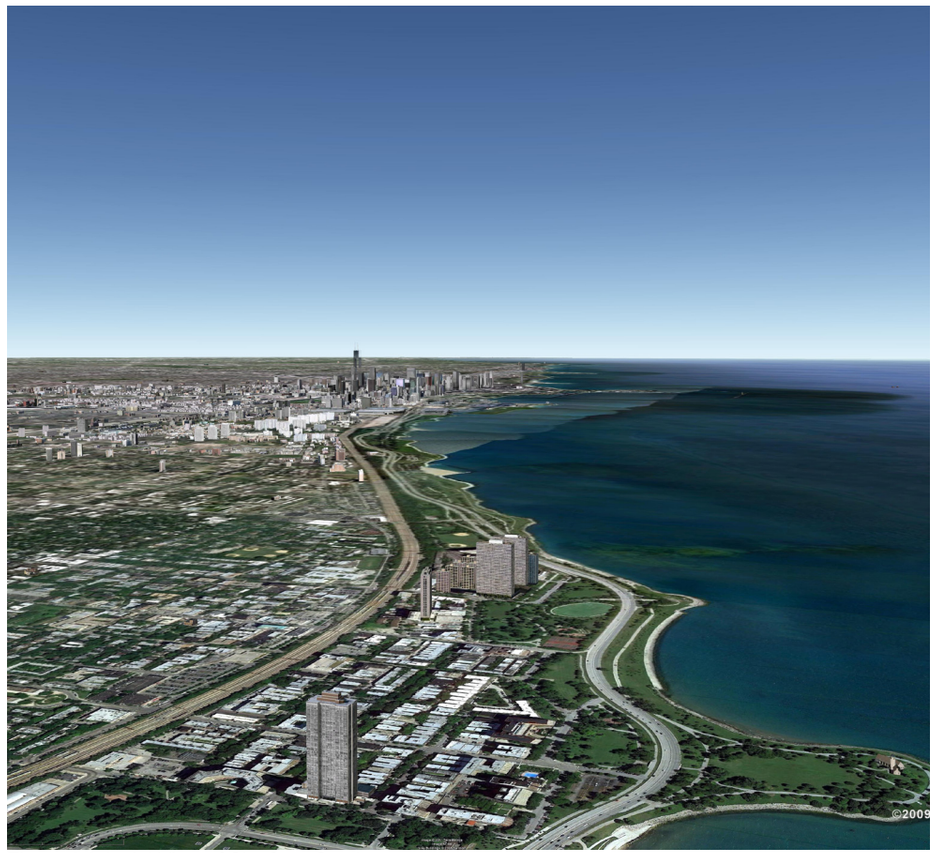


Figure 6.2 Aerial View of Site from South

PROJECT SITE

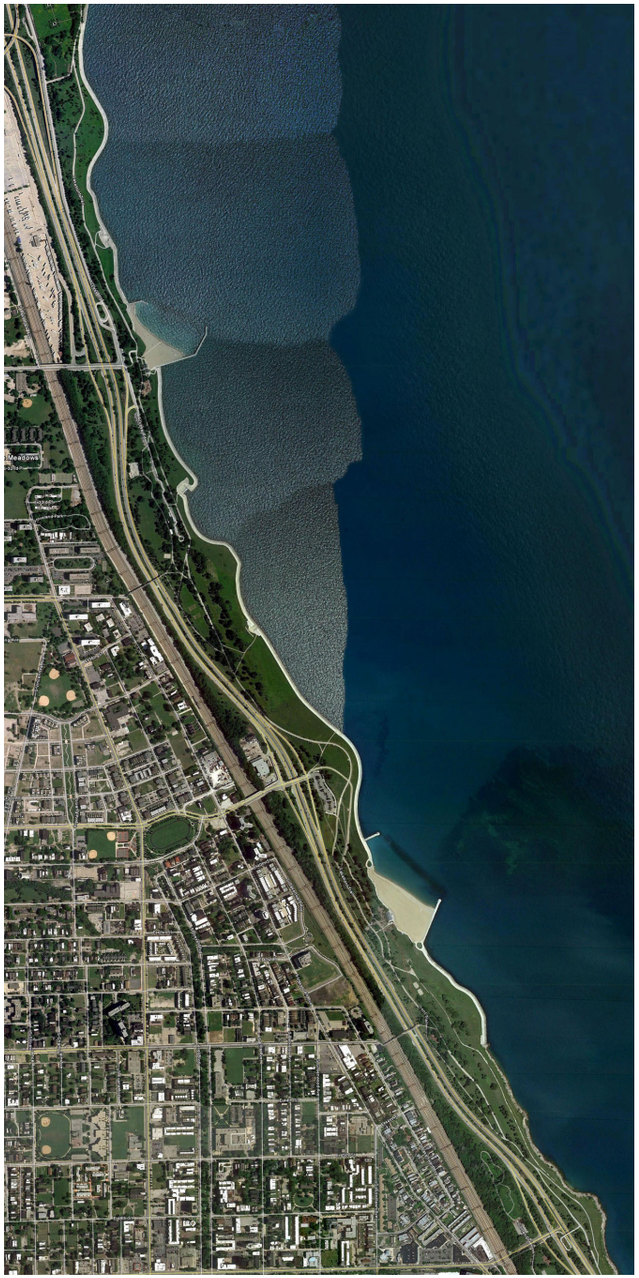


Figure 6.3 Satellite Image of Project Site

The project site is a narrow area of park space approximately one mile long that in its current state is primarily unprogrammed space. There are also very limited options for pedestrian access to the site. This is because Lake Shore Drive acts as a dividing line between the lakefront and the adjacent neighborhoods and there are minimal pedestrian bridges that are in sufficient condition for pedestrians to traverse.

This site was selected because it is an area of the lakefront that was never developed according to plan, and consequently, this stretch of the lakefront does not serve the community as well as it could. There are few elements on site to engage visitors. Expanding the waterfront through land reclamation is historically significant because it further completes the vision that was set into motion over a century ago and helps to provide more outdoor space for the neighborhoods that line this portion of the lake.

Figure 6.4 Project Site Photos

SITE INVENTORY

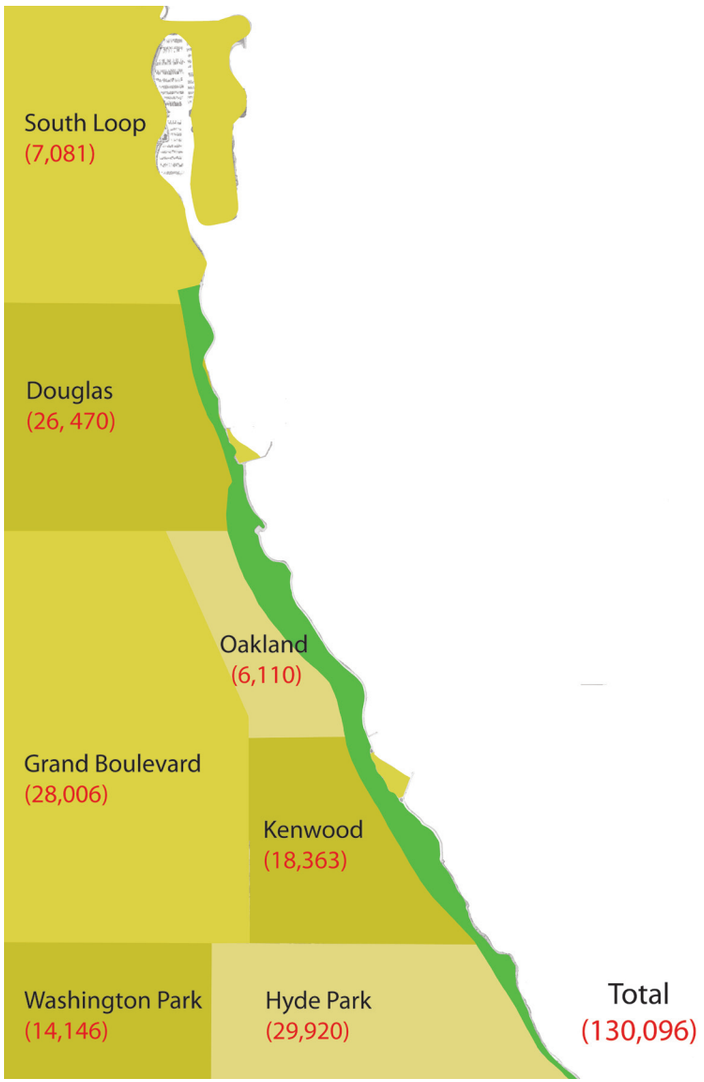


Figure 6.5 Contextual Neighborhoods Map

Zooming in to look at the site's adjacent context, the neighborhoods directly west of the project site are home to over 130,000 of Chicago's residents. That translates to 130,000 potential users for this part of the lakeshore. That is reason enough to provide more opportunities and development for people along the waterfront.

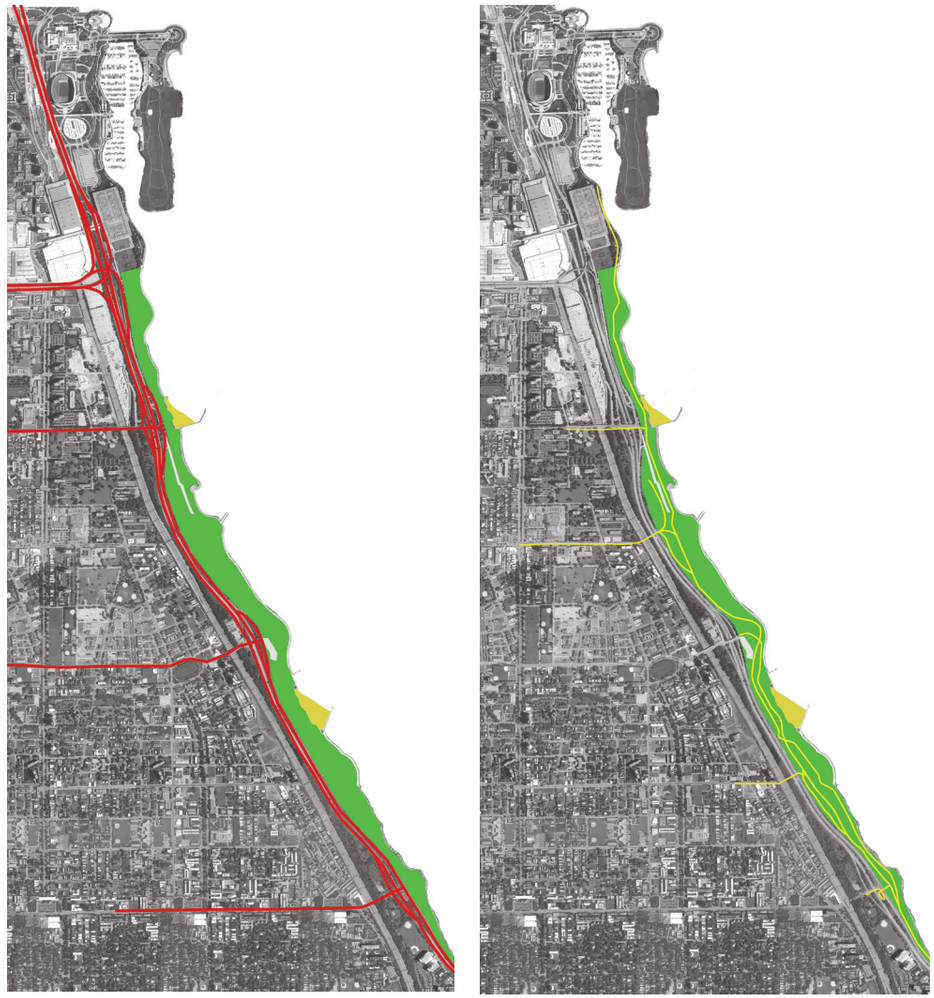


Figure 6.6 Circulation Diagrams

Circulation is a key factor for this project site. In terms of vehicular circulation, Lake Shore Drive provides strong vehicular travel directly adjacent to the site. This allows for easy site access as well as exposure. There is currently good flow of pedestrian circulation due to Chicago's 18 miles of lakefront bike paths. This will help bring people to the site from other parts of the city. The key will be to give people reasons to stay on the site.

SITE INVENTORY

Figure 6.7 Harbor Location Diagram

Figure 6.8 Current Site Assets

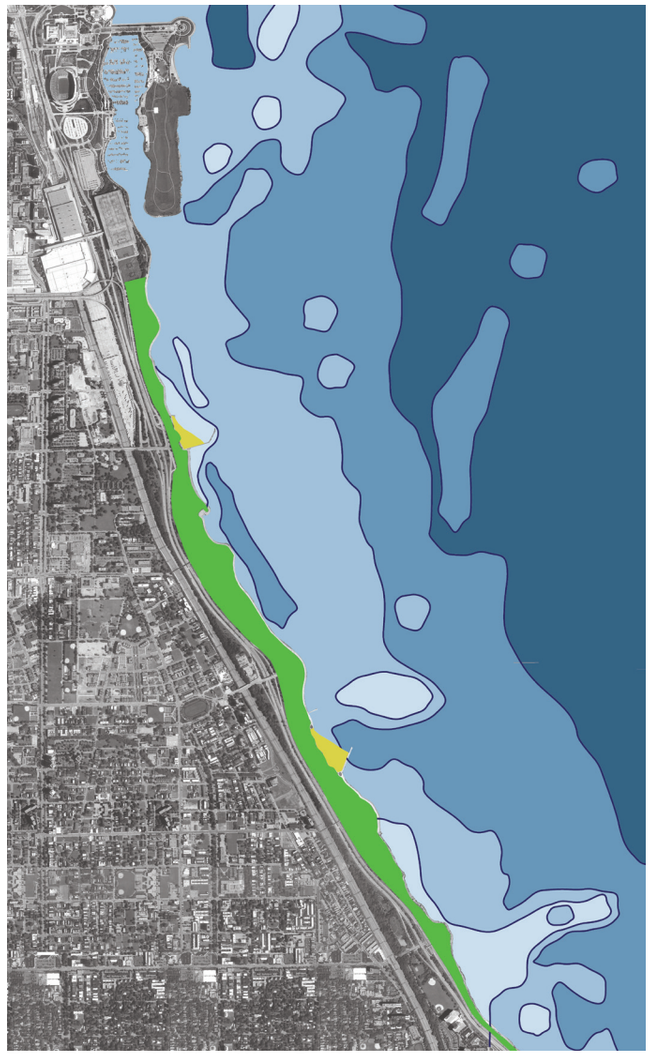


Figure 6.9 Lake Michigan Water Depths

The future 31st Street Harbor is an important design consideration for the project area. The location of the harbor dictates the way that the rest of the site is to be developed in terms of not only the design but the program and uses as well. The harbor is going to bring thousands of people to this area and requires that there is increased development. Currently, the site has few assets aside from the two beaches that attract summer visitors. The rest of the site is unprogrammed space, which leaves a blank slate and plenty of opportunity to introduce new site elements.

The water depths along the lakeshore are incredibly influential because it helps determines the extent to which expansion can occur. The shallow water depths are consistent along the shoreline, which makes park expansion that much more plausible and will require less material in terms of depth for the expansion areas.

SITE ANALYSIS

Figure 6.10 Site Analysis Diagram

The 31st Street Harbor - The 31st Street Harbor is an obvious asset for this area and it is necessary to play to the needs of the harbor users.

Expansion Areas - There are three large areas of unprogrammed space that create opportunities for expansion into the lake.

Pedestrian Access - The pedestrian bridges are necessary key site features that can become strong statements and site landmarks.

Lake Michigan - The water and wave action is a very important factor to consider, and the effects of the water can be seen as an opportunity or a constraint. It is very important to protect the shoreline so that it can be better utilized by the park users.

CASE STUDIES / DESIGN PRECEDENTS

A variety of different projects and case studies were looked at in order to draw inspiration for all aspects of the site design. Jackson Park in Chicago, located a bit south of the project site, was looked at for its naturalized aesthetic and its incorporation of a harbor into its park design.

The Louisville waterfront was also examined because of Louisville's ability to establish a bold waterfront in an urban setting that is very successful.

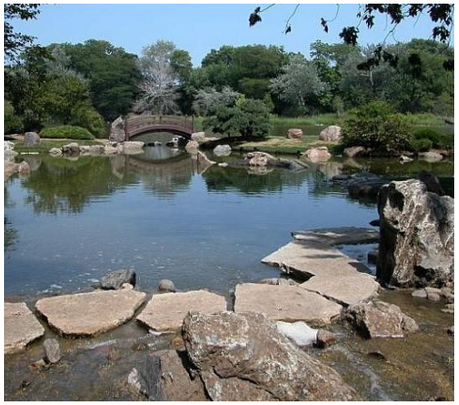


Figure 6.11 Jackson Park, Chicago

Figure 6.12 Louisville Waterfront

Figure 6.13 Artistic Pedestrian Bridges

Pedestrian bridges were also looked at to try to find ways to create artistic and bold statements while also providing the necessary function and access that these pedetrian bridges would provide.

The Palm Islands in the United Arab Emirates acted as inspiration for land reclamation and construction techniques.

Figure 6.14 Palm Islands, U.A.E.

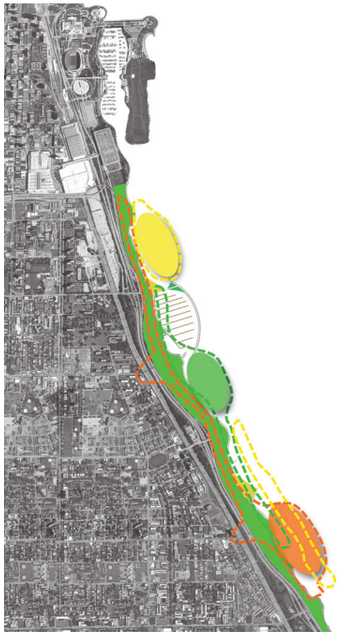
THE DESIGN

DESIGN CONCEPTS

The concept for how to approach the design of the project site began with the idea of establishing different uses along the waterfront that would attract as many users as possible. These broad use types are:

- Ecological
- Educational
- Recreational

Layering these uses along the entire shoreline helps promote movement and activity throughout the site.



Each type of use for the waterfront then has a designated focus area so that each use can touch the water and provide interaction with the shoreline.

The northern part of the site has a more ecological focus in order to connect with an exisitng bird sanctuary just north of the site. The central zone is recreationally focused due to the adjacency to the harbor. The southern zone is more passively and educationally focused.

Figure 7.1 Conceptual Diagrams

The concept of creating different zones, once refined, translated into three clusters of islands, each with a designated focus, whether that be ecological, educational, or recreational.

The outer islands would be used as shoreline protection as well as protection for the inner islands. Peninsulas are also featured in each island cluster to help get people out onto the water.

Figure 7.2 Refined Conceptual Diagram

MASTER PLAN

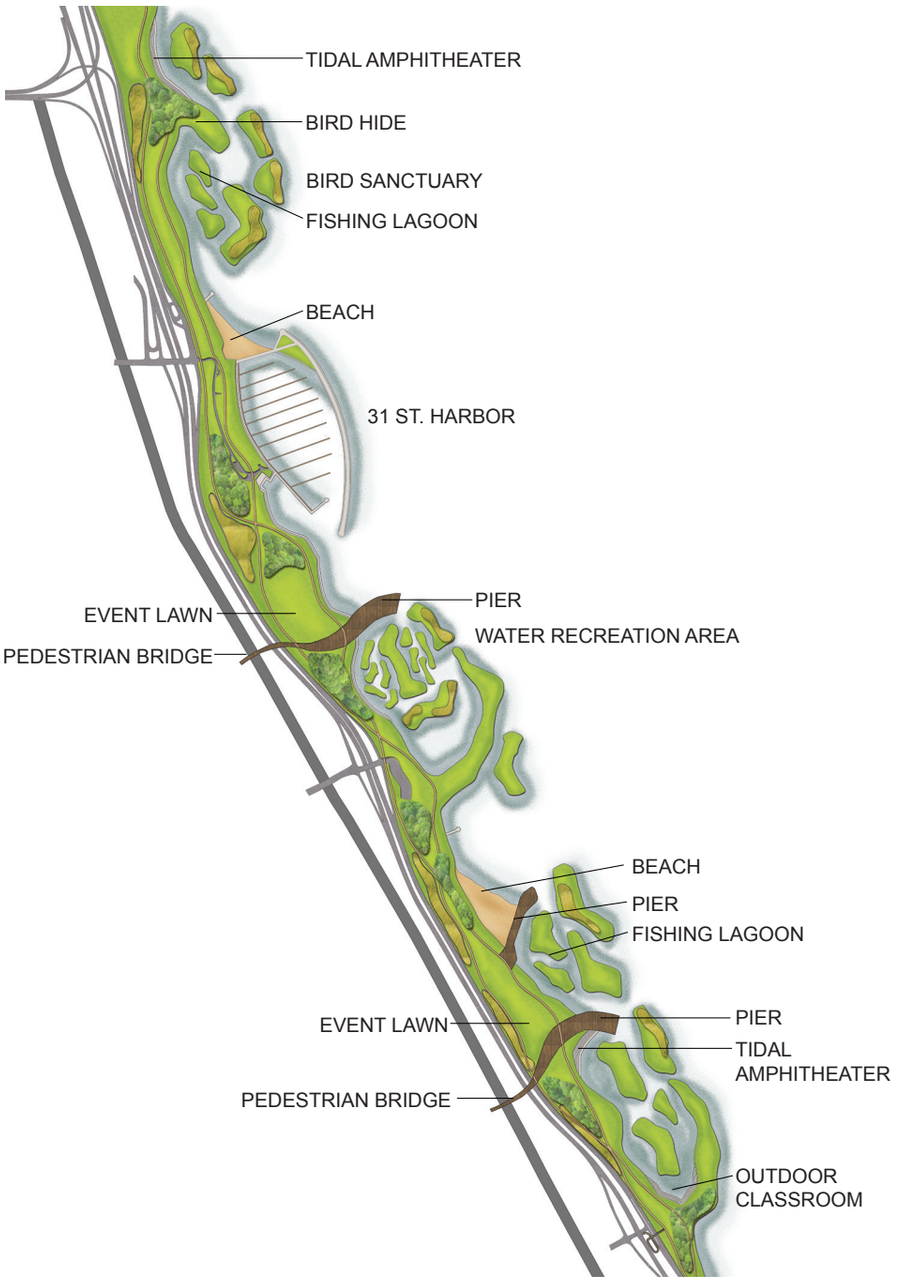


Figure 7.3 Master Plan

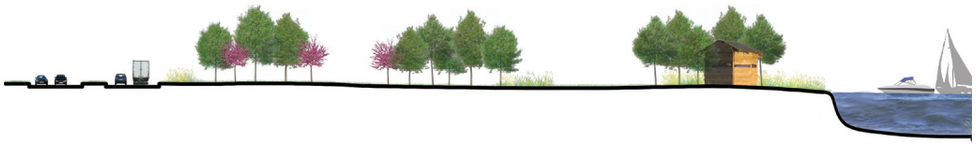
The master plan shows the development of three separate clusters of islands. The northern cluster is centered around the ecological needs of the site and features areas for bird watching and fishing. The central cluster, because of its proximity to the 31st Street Harbor, has a more recreational focus in order to attract harbor users and encourage them to explore the park space as well. The southern part of the site features more passive recreational opportunities.

The outer islands are structural to help protect the inner islands and the shoreline from Lake Michigan's strong wave action. The lake is a major factor for this waterfront. Protecting the shore from the waves, that can be harsh at times, will make the park space much more usable and inviting for visitors.

The inner islands are floating vegetative islands that create less impact in terms of structural needs and help to increase animal and marine life habitats.

Pedestrian bridges stretching over Lake Shore Drive are used to provide access from the adjacent neighborhoods. Piers are also used to help bring people out onto the water. Areas have also been designated for prairie restoration and groves of trees.

BIRD SANCTUARY SITE SECTION



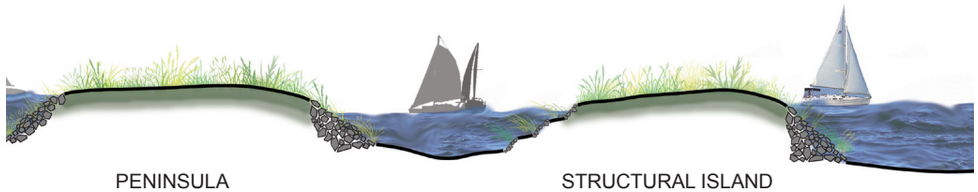


Figure 7.4 Bird Sanctuary Site Section

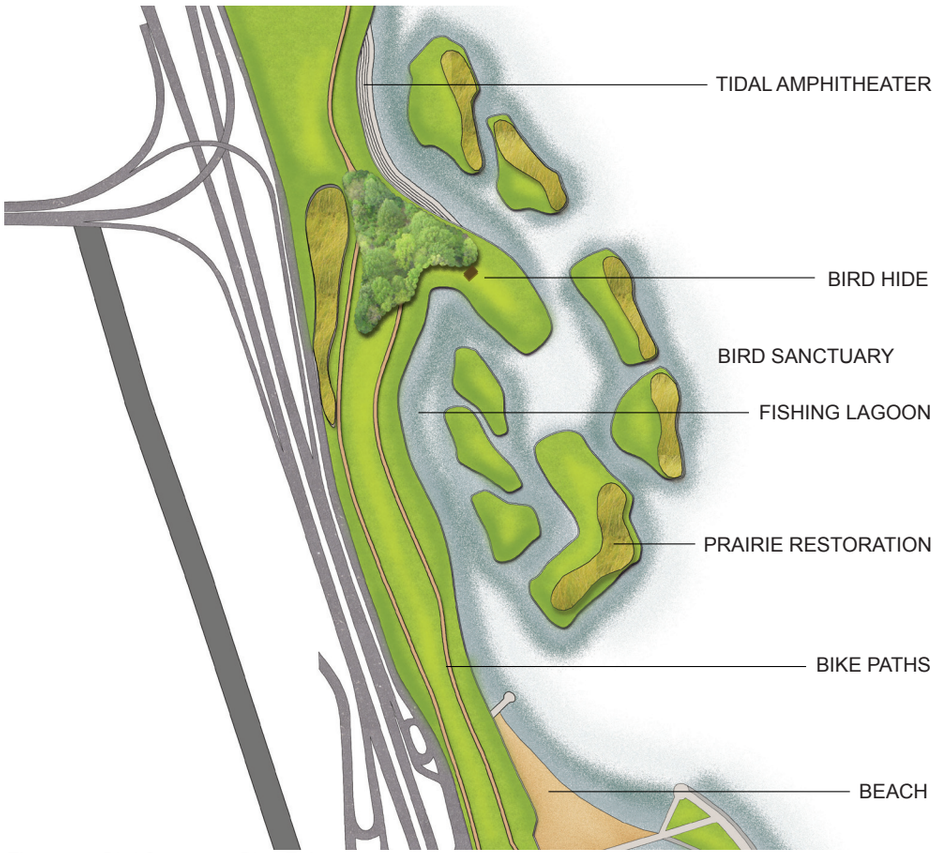


Figure 7.5 Bird Sanctuary Plan Enlargement

The northern island cluster's adjacency to the existing McCormick Place Bird Sanctuary makes it the perfect opportunity to become an extension of said sanctuary and provide a passive environment for more wildlife habitats.

The islands in this area are designated for wildlife only and the peninsula features a bird hide so that people can enjoy the birds and other animals inhabiting the islands.

Passive recreation such as fishing is also included in this area. A tidal amphitheater is featured to the north of the peninsula, which steps people down to the water so as to provide improved interaction with the shoreline.

BIRD SANCTUARY CHARACTER

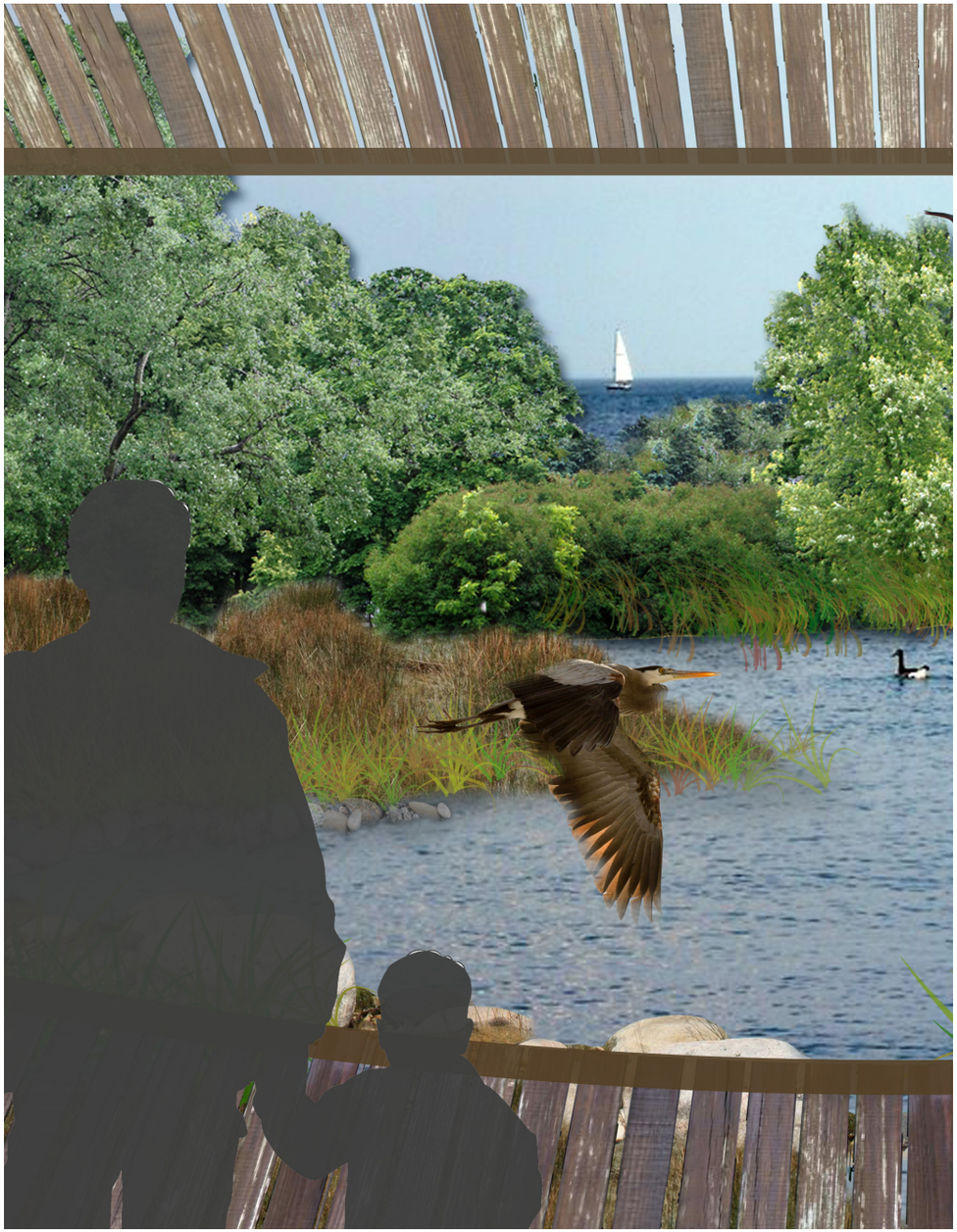
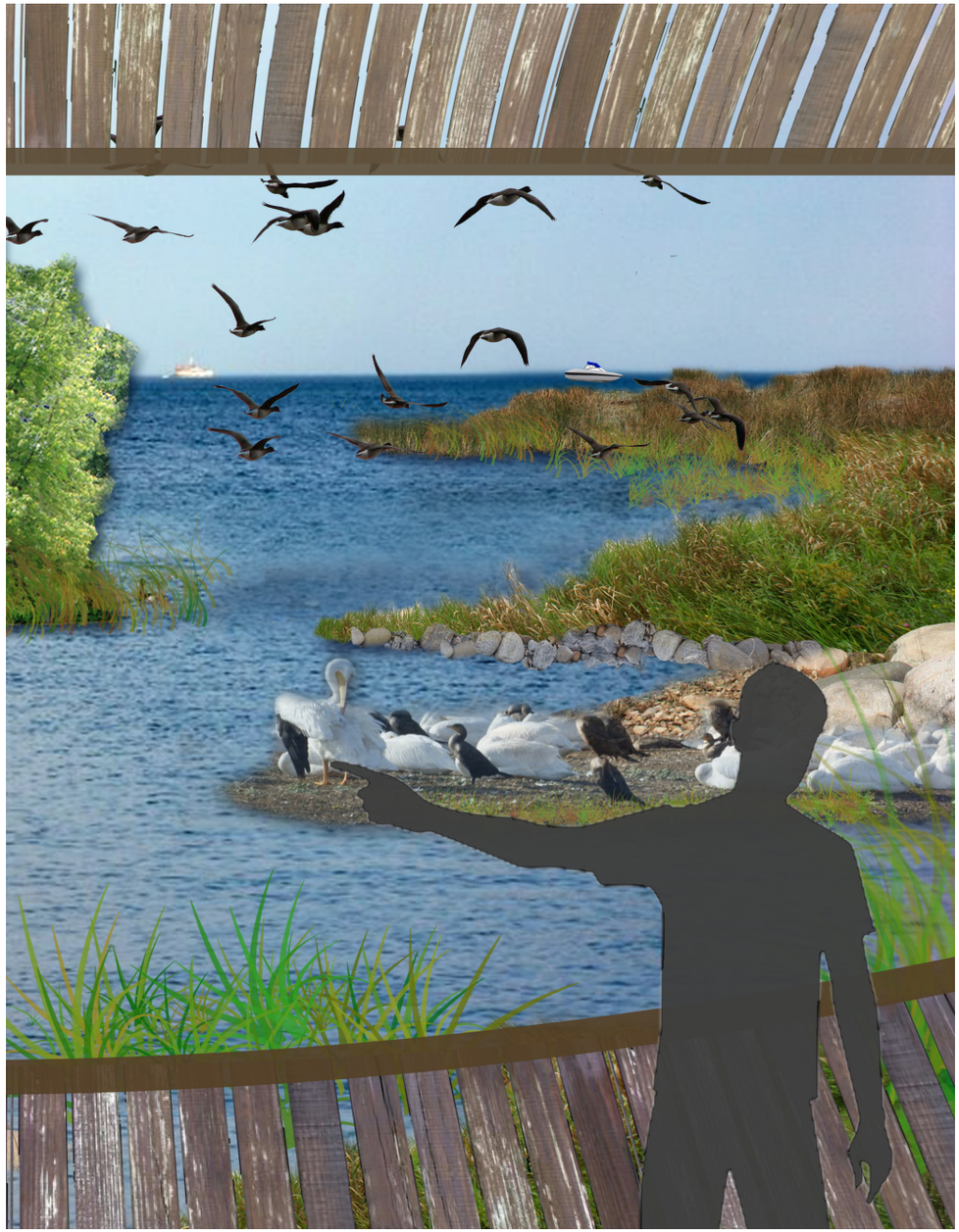


Figure 7.6 Bird Sanctuary Rendering



View from within the bird hide in the bird sanctuary island cluster.

HARBOR SITE SECTION

Figure 7.7 Harbor Site Section

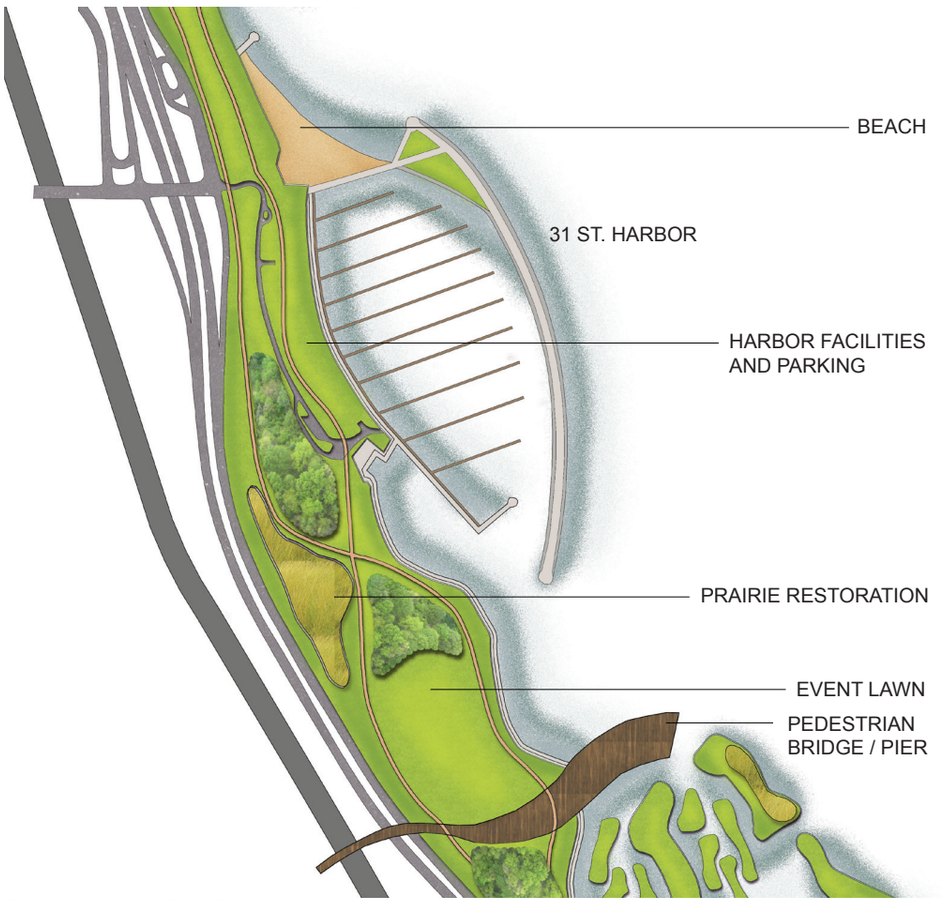


Figure 7.8 Harbor Plan Enlargement

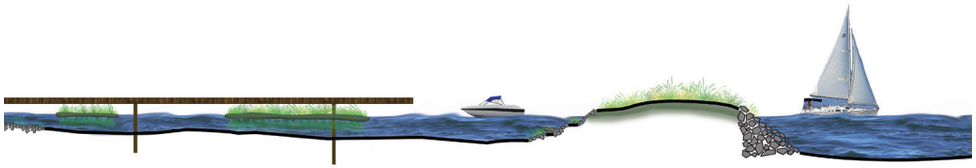
The harbor area features an event lawn and beach in addition to the facilities being constructed along with the harbor, which include underground parking and a community building that will also house the marina facilities.

Figure 7.9 Harbor Rendering

PEDESTRIAN BRIDGE SITE SECTION

PEDESTRIAN BRIDGE OVER DRIVE EVENT LAWN TERRACING

Figure 7.10 Pedestrian Bridge Site Section



FLOATING ISLANDS STRUCTURAL ISLAND

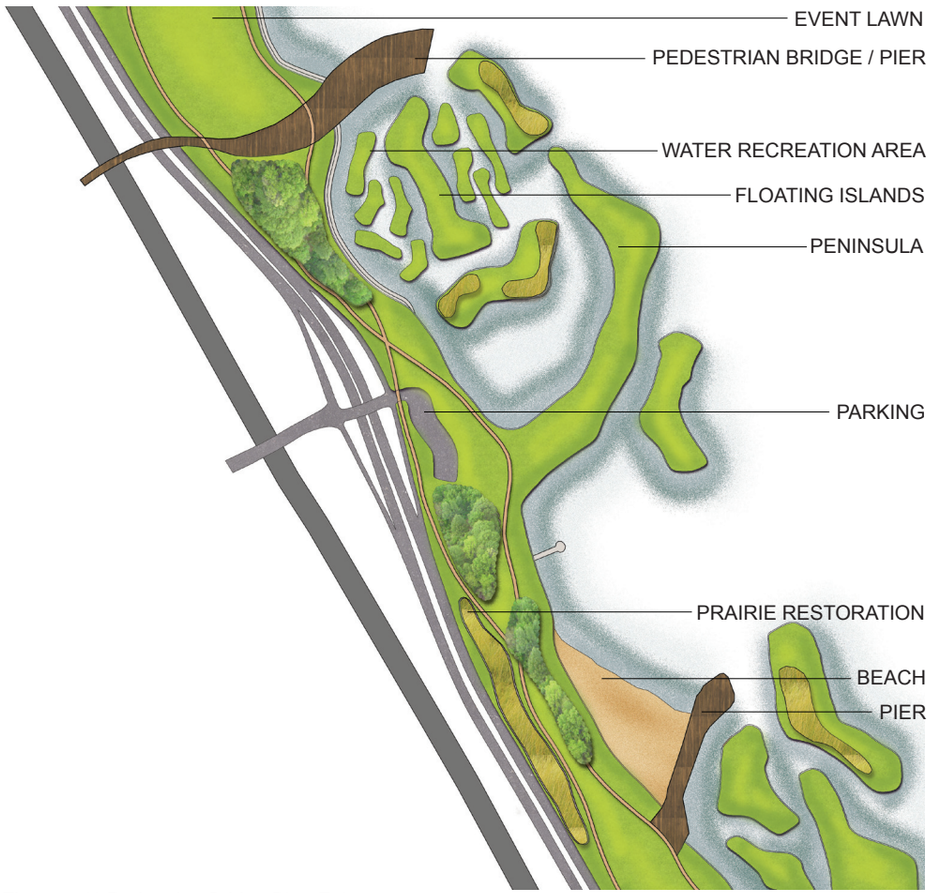


Figure 7.11 Pedestrian Bridge Plan Enlargement

The central area of the site is designated for recreational uses in order to play to the interests of the harbor users. A floating island cluster creates an area for water recreation such as canoeing and kayaking.

The pedestrian bridge, one of two on site like this, transitions into an even space using a differentiation in ground plane material, that then becomes a pier on the lake. This creates a bold statement and site landmark.

Figure 7.12 Bike Path Rendering

PIER CHARACTER

Figure 7.13 Pier Rendering

View showing how the ground plane material transitions into the pier over Lake Michigan.

DETAIL PLAN

Figure 7.14 Detail Plan

The southern section of the site also features a pedestrian bridge and pier structure, as well as a smaller overlook for those wishing to stay closer to shore. This area explores the idea of extending the walking paths out onto the peninsula and using a floating bridge to get people out onto the islands. This way, access to the islands could be controlled and restricted at times to ensure safety while still allowing visitors to explore the lakefront's new features.

PEDESTRIAN BRIDGE / PIER CHARACTER

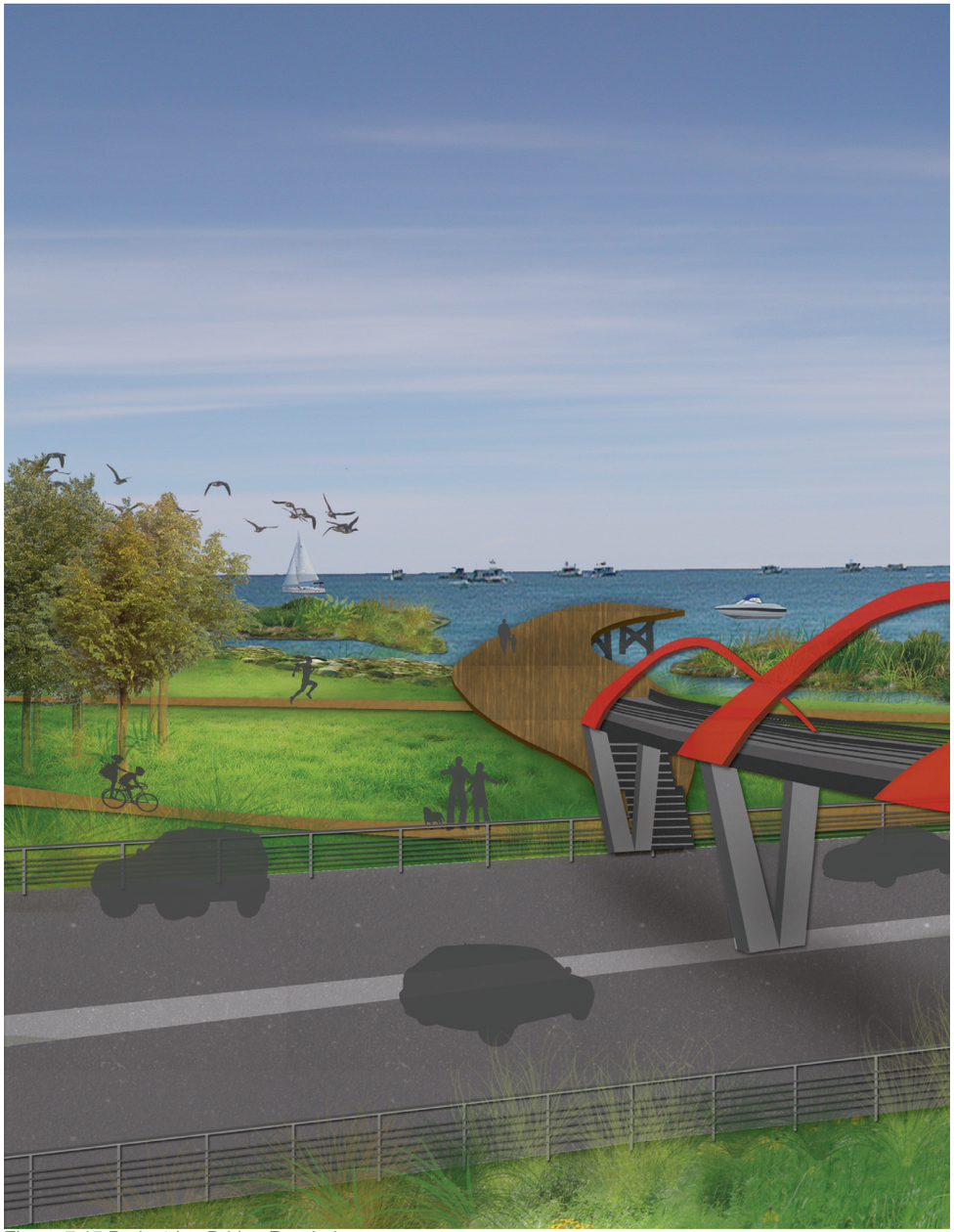
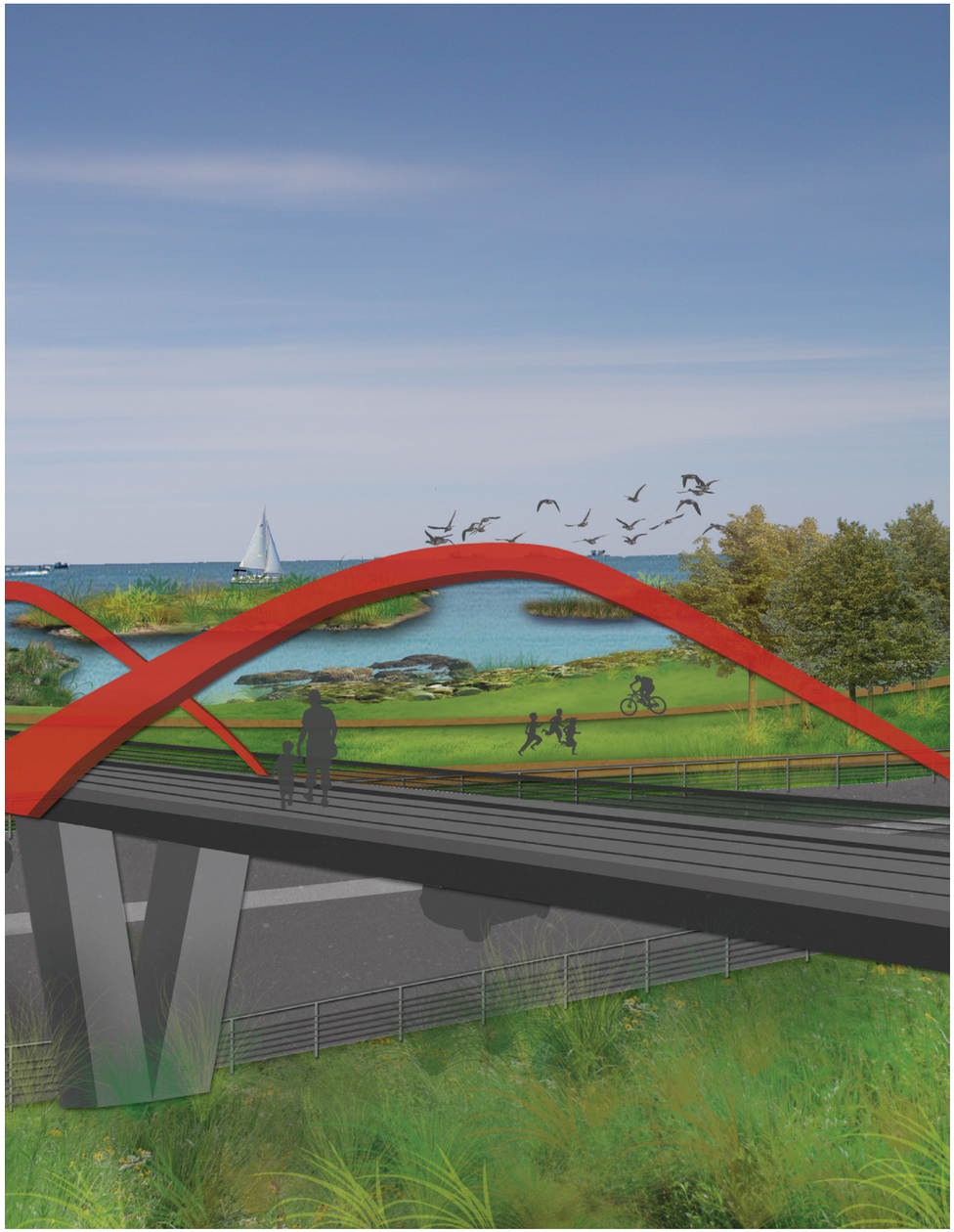


Figure 7.15 Pedestrian Bridge Rendering



View showing the pedestrian bridge to pier connection and surrounding site character.

CHARACTER IMAGERY

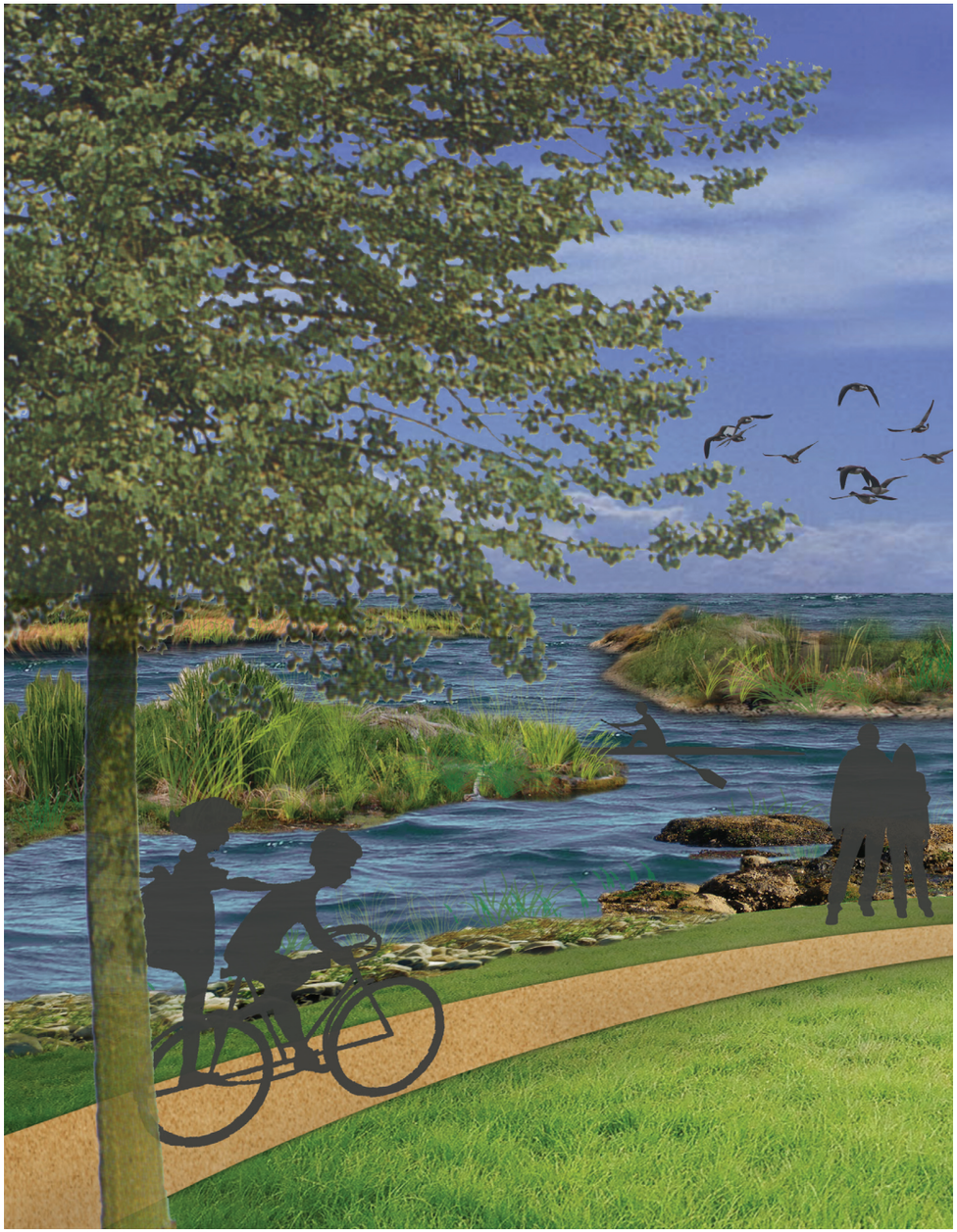
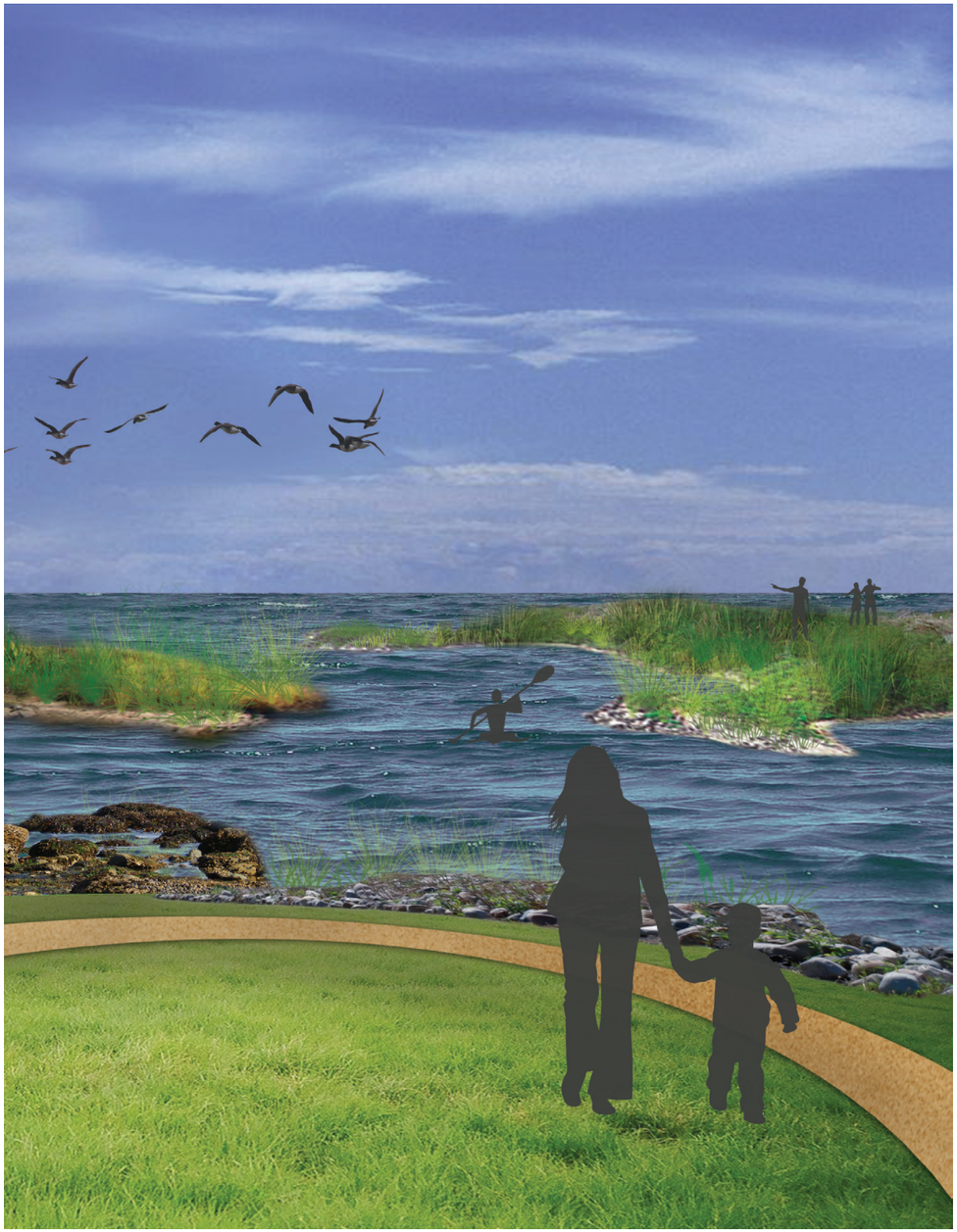


Figure 7.16 Shoreline Rendering



Typical view of islands and shoreline being utilized by visitors.

CHARACTER IMAGERY

Figure 7.17 Terraced Shore Rendering

View of terracing along the shoreline overlooking the Chicago skyline.

CONSTRUCTION DETAILS

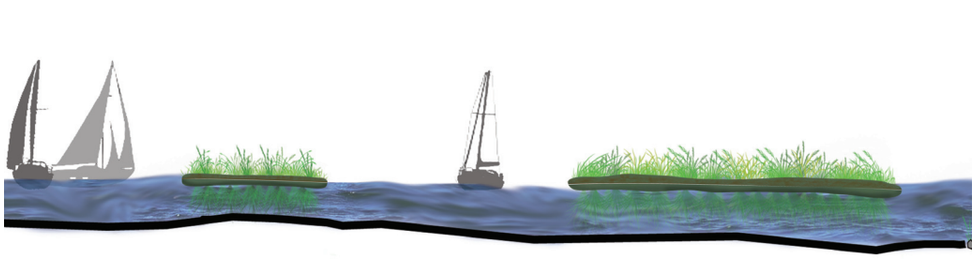
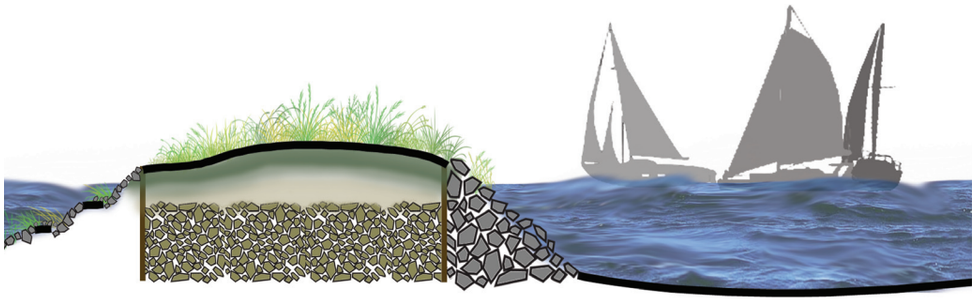


Figure 7.18 Island Typology Section



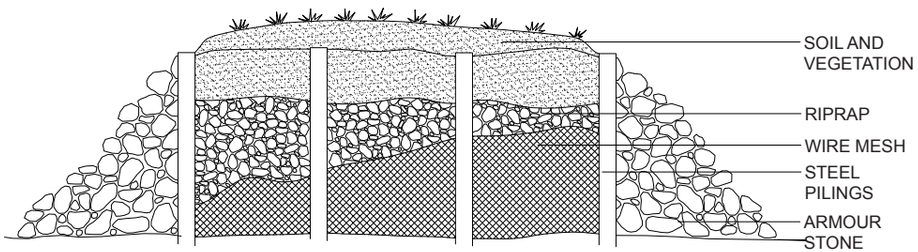


Figure 7.19 Structural Island Section

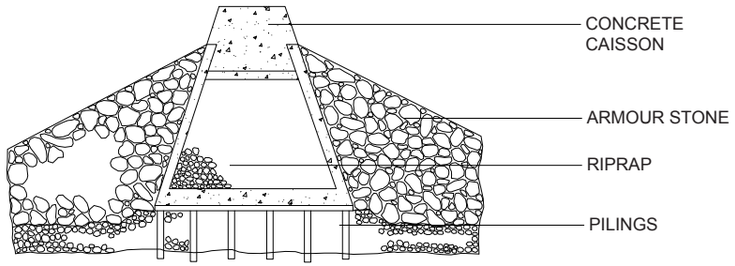


Figure 7.20 Breakwater Section

The structural islands are formed by setting steel pilings into the lake bottom and then attaching wire mesh to these pilings to establish the island perimeter. This is then filled with riprap stone and topped with soil and vegetation. Armour stone surrounds this to hide the piling and mesh structure. These islands will be stable enough to dissipate the waves and protect the shoreline from strong waves and erosion.

The floating islands consist of a marine-grade foam and geotextile system from which vegetation can grow and sustain. These islands are anchored into place to prevent them from moving. This is a great alternative to the structural islands because they will require less material to construct and because they will be protected by the outer structural islands, they will not endure as much wave action.

The breakwater is a feature that will be constructed as part of the harbor and used to protect the boats and boat slips from severe wave impacts. The structure of the breakwater consists mainly of a precast concrete caisson that is set into place and then surrounded by armour stone to secure it into position.

CONCLUSIONS

CONCLUSIONS

Chicago and the shores of Lake Michigan go hand in hand. The lake has helped to make the city the international icon that it is today, and the city has made the lakefront the destination and wonderful natural amenity that it will always be. And this relationship has been the reason that the city taken such pride in taking care of its lakefront.

Figure 8.1 Chicago Skyline from Bike Path

There has always been a grander vision for the lakeshore south of downtown. Lagoons and man-made islands built offshore to help protect the coastline from erosion and create a more pleasant environment along the waterfront. However, this vision has yet to come to fruition. The urban waterfront park outlined in this project would help to put together the piece of the puzzle that has been missing since Daniel Burnham forged his original plans for this city over a century ago.

This project provides a lakeshore environment that is unique to the city while still maintaining the vision and theme from the past that makes it historically significant. While the idea of creating land to protect the shore was always a point of consideration, the way that this design functions is a modern twist on the original plan. Providing islands that are both structural and non-structural (floating) is a way to incorporate new technology and establish a system that is less impacting on the environment.

One of the main goals of this design was to provide spaces and functions for as many user groups as possible. As the project progressed, it became clear that the users were no longer just people, but nature and wildlife as well, and creating spaces to reintroduce more wildlife to this area became crucial and enriching for the design. Creating different areas of development then allowed for human needs to take center stage in certain areas of the park and wildlife and aquatic life to take priority in others, which made for a more dynamic experience.

Because this project is so directly connected to the elements, most predominantly Lake Michigan, the design of the park can only be expected to evolve over time as it becomes accepted into its natural surroundings. The landforms could change, through both erosion and buildup, the vegetation will mature over time, and the wildlife and habitats could likely transform to play host to different species. This evolution of space will allow visitors to grow and change with the waterfront and hopefully attract new users far into the future.

The need for a fresh look on the south lakeshore that would attract people to the site was the reasoning behind even investigating this site and its history in the first place. This project design and all of its components fulfill that goal of providing a new and updated park space for residents and tourists to enjoy while also meeting the historical needs of the site. It would be very interesting to see how this design would be received by the public and how it would evolve over time.

Figure 8.2 Pier Rendering

APPENDICES

GOALS RECAP

GOAL 1: Create a waterfront park that is well connected to the existing open space network and the lakefront both physically and thematically.

Objective 1: Find locations to extend trails and pedestrian routes from nearby parks into site.

Objective 2: Integrate design elements and site features from existing park network into site to establish visual continuity and connectivity.

Objective 3: Use design elements that demonstrate the historical significance of the lake and the site.

GOAL 2: Connect as many user groups as possible to the site.

Objective 1: Provide safe and direct pedestrian access from adjacent communities and neighborhoods into the site.

Objective 2: Add bike lanes and sidewalks where necessary on existing streets surrounding the site to encourage more pedestrian activity.

Objective 3: Use signage and wayfinding to assist users in accessing the site.

GOAL 3: Create a park that is unique to the waterfront and celebrates water.

Objective 1: Create a waterfront park through a series of islands built near the lakeshore that will bring new identity and excitement to the lakefront.

Objective 2: Allow users to interact directly with the lake in an effort to urge users to better appreciate the lake as an amenity.

SITE PHOTOS

Figure 9.1 Additional Site Photos

METHODOLOGIES

This methodology was used to research the significant characteristics and design principles of waterfront parks, the structure and engineering required to create a waterfront park, and possible locations to incorporate an urban waterfront park in downtown Chicago. Qualitative, quantitative, and historical methods were used to gather the necessary data for each subproblem.

Primary and secondary methods were used to determine the design characteristics of urban waterfronts. Case studies that demonstrate important waterfront characteristics, including the waterfronts of Barcelona, Amsterdam, and New York, were considered. These resources were found in books from the Ball State University Architecture Library. *Beyond the Edge: New York's New Waterfront* by Raymond Gastil outlines many successful urban waterfronts throughout the world and the keys to their success. Other sources that were studied outline important principles for urban open space that were implemented in this design. *Urban Open Space: Designing for User Needs* by Mark Francis is a resource that informs readers about important elements of urban designs and features to consider in urban space planning. Another important data source for this subproblem was the observation of existing waterfront parks in Chicago.

This primary data helped to reveal common design characteristics already in place that can be carried into the new park design. Secondary methods were used to develop an understanding of possible land reclamation methods to consider for this waterfront park. "Land Reclamation: Land from the Sea (and Other Places)" by Fred Hadley is an article that outlines the ideas and methods behind land reclamation that were helpful in the design process. Case studies of recent projects were also examined. "Imagining Dubai's Palm Islands" by El Hadi Jazairy describes the process that the United Arab Emirates has gone through in order to create one of the most outstanding land reclamation projects in recent history.

Determining possible locations for this waterfront park along the lakeshore required examining secondary data sources. It was important to look into the past to see what has been planned for the lakeshore throughout Chicago's history. *The Landscape Architecture Heritage of Illinois* by Malcolm Cairns was helpful in this regard because it describes plans that designers such as Burnham and Olmsted had for the city. The Lakefront Plan of Chicago was created in 1972 and is a more recent vision of the lakefront than Burnham's turn of the century plan. Both of these resources were very helpful because they allowed for comparisons between what was planned, what has actually been implemented, and what still needs to be done.

Additional articles were examined to understand any current steps being taken along the waterfront. "The Last Four Miles: Completing Chicago's Lakefront Parks" is a plan created by the Friends of the Parks organization and it is a plan to add two miles on either end of the lakefront park system to further complete the green shoreline. "The 31st Street Harbor Concept Plan" provided insight into the harbor that is being built on the lakeshore south of Northerly Island. These resources were useful for understanding the current vision for the lake.

Figure 9.2 Grant Park Panorama, Chicago

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“The Last Four Miles: Completing Chicago’s Lakefront Parks | Friends of the Parks.” Friends of the Parks | Improving Chicago’s Parks Since 1975. Web. 02 Nov. 2010.

IMAGE REFERENCES

Figure 1.1 Chicago Skyline Panorama
http://www.about-bicycles.com/chicago-lakefront-trail.htm

Figure 3.1 Crowd at Chicago Air and Water Show
http://alaska-ipc.org/bike_blog/2010/08/25/biking-the-chicago-lakefront-bike-trail/

Figure 3.2 Chicago Skyline from South Shoreline
Google Earth

Figure 3.3 Aerial view of Chicago’s South Shore
http://beautifulplacestovisit.com/cities/chicago-illinois-united-states/

Figure 4.1 Barcelona Waterfront
http://www.advfortravel.com/

Figure 4.2 Amsterdam Canal View
http://www.flickr.com/photos/neddy/140068017/

Figure 4.3 Bryant Park
http://www.inetours.com/New_York/Pages/photos/Bryant-Park_42nd.html

Figure 4.4 Summer in Bryant Park
http://www.inspiringcities.org/index.php?id=18254&type=article

Figure 4.5 Harbor View, Barcelona
http://aboutspaintravel.com/barcelona-waterfront-port-vell

Figure 4.6 Burnham Plan
http://www.essential-architecture.com/ARCHITECT/ARCH-Burnham.htm

Figure 4.7 World Exposition, Chicago
http://cae2k.com/photos-of-roma-0/chicago-historical-pictures.html

Figure 4.8 Burnham Plan, Aerial View
http://ni9esquare.blogspot.com/2011/01/chia-city.html

Figure 4.9 Park Space Created by Landfill in Chicago
http://www.chicagocarto.com/burnham/lakefront.html

Figure 4.10 Palm Islands Construction
http://adventure.howstuffworks.com/dubai-palm1.htm

Figure 4.11 Palm Islands Aerial View
http://www.dubai-information.info/palm_island_dubai.html

Figure 4.12-15 31st Street Harbor Concept Plan Imagery
http://www.chicagoparkdistrict.com/resources/harbors/pdf/31st_Street_Harbor_Concept_Plan.pdf

Figure 5.1 Grant Park, Chicago
http://www.chicagoparkdistrict.com/

Figure 5.2 Chicago Lakefront Path
http://achicagosojourn.blogspot.com/2008/07/lakefront-bike-path-etiquette.html

IMAGE REFERENCES

Figure 5.3 Outdoor Concert Space
http://www.arendal.com/en/Whats-on/Main-events/
Figure 5.4 Canoeing Group
http://www.chateau-adventure.com/canoeing.htm
Figure 5.5 Sailing Lesson
http://www.alpenayouthsailingclub.com/
Figure 5.6 Beach
http://www.abc.net.au/news/stories/2008/03/19/2194124.htm
Figure 5.7 Fishing Pier
http://sdbay.googolmaps.com/pages/Fishing%20Pier.htm
Figure 6.1 Vicinity Map
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Figure 6.2 Aerial View of Site from South
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Figure 6.3 Satellite Image of Project Site
Google Earth
Figure 6.11 Jackson Park, Chicago
http://fallopia.net/2010/06/15/secret-gardens-of-chicago/
http://picasaweb.google.com/who.is.the.dr/JacksonParkChicago#
Figure 6.12 Louisville Waterfront
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Figure 6.13 Artistic Pedestrian Bridges
http://activerain.com/blogsview/723207/tempe-town-lake-pedestrian-bridge
http://scriptecture.com/?attachment_id=361
Figure 6.14 Palm Islands, U.A.E.
http://www.eikongraphia.com/?p=1899
Figure 8.1 Chicago Skyline from Bike Path
http://www.about-bicycles.com/chicago-lakefront-trail.htm
Figure 9.2 Grant Park Panorama, Chicago
http://chowtimes.com/2010/05/11/chicago-buckingham-fountain-in-grant-park/

ABOUT THE AUTHOR

Erin Trompeter is a fifth year Landscape Architecture student in the College of Architecture and Planning at Ball State University and will be graduating in May 2011 with a BLA. She was born and raised in La Grange, IL, a suburb of Chicago. She has interned at JJR, LLC in Chicago and is hoping to pursue a landscape architectural career in the fields of urban design and campus master planning. Her interests include travelling, reading, and playing golf.

ERIN TROMPETER

OBJECTIVE

Seeking entry-level job opportunities in the field of landscape architecture in order to work toward attaining my professional license.

EDUCATION

BALL STATE UNIVERSITY
MUNCIE, IN. *2006-2011*

- Bachelor of Landscape Architecture
- Attended on Academic Scholarship
- 2009 AIA Eastern Chapter Scholarship Recipient
- Dean's List student
- ASLA member since 2007 (BSU student chapter)

WORK EXPERIENCE

LANDSCAPE ARCHITECTURE INTERN
JJR, LLC. (CHICAGO, IL.) *2009-2010*

- Intern in Chicago office for two summers
- Tasks included: CAD drafting (for schematic, design, and construction document phases), photoshop rendering, plan graphics, construction site visits, etc.

CADDIE
LA GRANGE COUNTRY CLUB (LA GRANGE, IL.) *2001-2009*

- Spent nine summers as a caddie.
- Tasks included: Carrying golf clubs, greenside duties, advising golfers. Requires dedication and motivation.

APPLICABLE SKILLS

- Comfortable with hand drafing and rendering
- Proficient in: *AutoCAD, Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Microsoft Office*
- Experience in: *ArcGIS*
- Knowledge of site engineering and grading practices
- Knowledge of plant materials

INTERESTS

- Travel (Spent Spring Semester 2010 on a 27-country world tour through Ball State's College of Architecture)
- Athletics (Played on the golf and soccer teams in high school. Continue to play golf regularly.)
- Architecture
- Reading

REFERENCES

Paul Wiese, RLA, LEED AP
Co-Studio Leader, JJR Chicago
E: paul.wiese@jjr-us.com P: 312-641-0510

Leslie Smith
Professor of Landscape Architecture, BSU
E: lsmith2@bsu.edu P: 765-285-1978

318 S. ASHLAND AVE.
LA GRANGE, IL 60525
(708) 655-2805
EETROMP@GMAIL.COM